

Method and Apparatus for High Speed Packet Switching Using Train
Packet Queuing and Providing High Scalability

ABSTRACT

Disclosed herein is a system architecture capable of processing fixed length and/or variable length data packets. Under the method
5 of the invention, incoming data packets are queued together according to their corresponding switch processing parameters (SPPs), and then the commonly-queued data packets are processed through a switch fabric as a single unit. In one aspect of the invention, the commonly-queued data packets are processed by the switch fabric as a
10 single train packet. In another aspect of the invention, the commonly-queued data packets are sliced into a set of subtrain packets. A switch fabric then processes the set of subtrain packets in parallel using a plurality of switch planes. Both aspects of the invention can be implemented with a plurality of packet formatters
15 and deformatters linked to a switch fabric in various configurations, including multi-path and hierarchical switching systems. a multichannel switching system.